Consultant supported ERP implementation – a learning opportunity?

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SSE/EFI Working Paper Series in Business Administration No. 2005:3

Abstract[1]

Management consultants are often described as accumulators, generators and disseminators of knowledge in the business world. Little research has however been devoted to the extent to which and the processes by which organizations hiring management consultants learn. This issue is addressed in the current paper based on a study of a consultant-supported ERP (Enterprise Resource Planning) implementation project. It is concluded, that projects in which consultants and employees of the hiring organization interact extensively provide large opportunities for individual learning. This learning is facilitated by the braking down of organizational boundaries in the improvement project, enabling open and intense interaction. Tensions were however observed between the improvement project and employees in day-to-day operations. The collaboration in this interface was more strained and thus impeded learning and knowledge creation within the day-to-day business. These barriers between the improvement project and the daily operations were created by the same forces that created the open atmosphere between consultants and client personnel in the project.

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[1] The financing of this project by VINNOVA is gratefully acknowledged.

Introduction

Management consultants have in the past decade become an increasingly important phenomenon in organizations' developmental processes. As organizations have reduced their staff, an increasing need for external knowledge resources has emerged (Ellström, 2000; Lennerlöf, 2000), which has partly been filled by management consultants. Management consultants are often viewed as knowledge brokers, carrying ideas about solutions from one firm and context to another (Bidault & Cummings, 1994; Hargadon, 1998; Poulfelt & Payne, 1994). Management consultants also view themselves as knowledge repositories and creators, one reflection of this being their substantial investments into knowledge management activities.

While the role of management consultants in providing their client organizations with essential knowledge has been widely acknowledged in the literature, the extent to which and the processes by which management consultants contribute to their client's organizational learning has received less attention. This paper studies a large implementation project of an enterprise resource planning system in order to shed some light on the client's learning in consultants supported change projects.

The implementation of ERP (Enterprise Resource Planning) systems provides an interesting context for the study of organizational learning in consultant supported projects. These projects generally involve a large number of external consultants in varying specialties covering knowledge about business processes, the IT system and project management. They also include a thorough analysis and assessment of current operations, involving representatives of the client organization, thus providing an arena for both intra- and interorganizational learning. ERP systems implementation projects thus involve a number of potential learning opportunities and needs including the way in which work is organized and carried out, the way in which large projects are designed and managed, functionality and maintenance of the new IT system, etc. (Lindvall & Pahlberg, 2003).

The current study looks closer at an extensive ERP implementation in a large Swedish company. However, before getting into the learning processes in the studied project the literature on management consulting and its contributions to its customers' learning will be reviewed. As this literature does not provide much insight into the processes and enablers of learning in consultant supported change, we turn to an investigation of knowledge and

learning more generally and of how this takes place in interorganizational setting more specifically. This investigation is followed by an empirical section describing learning both within the ERP implementation project and the business in which the system is to be implemented. The empirical section is followed by a discussion comparing the learning in the two contexts. The conclusions of the study are summarized in a final section of the paper

Management consulting, learning and the effects of organizational boundaries

Client Learning In the Management Consulting Literature

Although management consulting is generally described as a knowledge intensive activity and knowledge transfer an important rationale for management consulting, the transfer of knowledge from consultant to client has gained limited attention in the literature. Two opposing views on learning – which represent two different approaches to the management consulting process – can be identified in the literature. These are expert vs. process consulting (Greiner & Metzger, 1983; Schein, 1988; Schein, 1993; Stjernberg & Werr, 2001). In the *process-consulting role*, the consultant focuses on the interpersonal relations in the client organization, and the taken-for-granted assumptions that govern these relations (Risling, 1987; Schein, 1988). By contributing to better communication and the development of more efficient interpersonal processes, possibilities for viewing the organization and its environment in new ways are created. Schein (1988) describes the potential learning in process consultation as follows:

> The events to be observed and learned from are the human actions that occur in the normal flow of work, in the conduct of meetings, in the formal or informal encounters between members of the organization, and in the more formal organizational structures … The essential function of process consulting, besides facilitating the client's learning throughout the consulting process, is to pass on the skills of how to diagnose and fix organizational problems so that the client is more able to continue on his own to improve the organization. (Schein, 1988, p.11)

The focus of learning in process consultation is thus the client members' understanding of the internal, interpersonal processes through which problems in the organization are approached and solved. Learning about the client organization also takes place in the problem solving process itself, in which organizational members learn from each other and create shared new knowledge (c.f. Schein, 1988; Stjernberg et al., 2001; Vogt, 1993). Emphasis is placed on the

client's acquisition of the analytic and problem-solving skills involved in process consultation. In order to make learning in process consultation happen, the consultant's values and skills are claimed to be instrumental. Vogt (1993) lists 11 success factors for empowering the organization in the consulting process, including self-awareness, interpersonal skills, a focus on the client and his needs, democratic values, and the importance of "walking the talk."

An important assumption underlying process consulting is that the client possesses the necessary content knowledge for solving his or her problem. The consultant's role is to support the organization's problem-solving processes so that this knowledge can be used productively. The process consulting literature, to a large extent, denies that the consultant may possess important content knowledge concerning the problem to be solved. Providing such knowledge is seen as a violation of an important assumption in process consulting – that the client should him/herself own the problem that motivated the consulting process as well as the solution resulting from this process.

The *expert consultant* is often presented as a contrast to the process consultant. This individual is seen as a problem solver and source of expert knowledge. Consultants should diagnose the problem and suggest a solution based on their experience and expert knowledge. The expert consultant possesses both knowledge about alternative solutions as well as knowledge about the adaptation of these solutions to a specific situation (Greiner & Metzger, 1983; Bessant & Rush, 1995). Through his/her external and independent position, the consultant is also seen as having unique possibilities to generate objective information on the organization and its environment (Kieser, 1998).

The client's learning, from this perspective, is viewed as unproblematic. If it is even discussed, it is generally examined in terms of the client's understanding of the proposed solution, as this is a central prerequisite for its implementation and institutionalization. The expert consulting literature is generally not concerned with the client's ability to tackle similar situations on his own in the future. Knowledge is in this literature mainly viewed as explicit and therefore easily transferable. What might hinder this transfer is the trust between the client and the consultant, a factor that might impede an open exchange of information. Other barriers might be the use of inexperienced junior consultants or an unclear problem definition (i.e., the client does not know what he wants). The above two styles of consulting are

summarized in Table 1 in terms of their knowledge base, assumed consulting role and client learning.

	Expert Consulting	***Process Consulting***
Consultant's knowledge base	Content knowledge (e.g. about organizational structures, IT, etc.) Explicit knowledge Weakly embedded knowledge	Process knowledge (how people interact) Tacit knowledge Strongly embedded knowledge
Consultant's role	Expert/problem solver	Coach/facilitator
Client learning	Understanding the solution	Understanding the organization's interpersonal and problem solving processes Skills for diagnosing and intervening in the above processes

Figure 1. Knowledge and Client Learning in Different Consulting Styles

This review of the consulting literature suggests that the client's learning in the consulting process is handled superficially and one-sidedly by both the process consulting and the expert consulting literature. Whereas the client's learning is largely ignored in the expert consulting literature, it is given substantial attention in the process consulting literature. However, this literature's focus on the client organization's interpersonal processes and the consequential disinterest in the consultant's content knowledge misses out a large potential source for true generative learning in the client organization. Also, little is said about under what conditions and by what processes learning takes place in consulting processes.

Interorganizational Learning

In the following, we will discuss interorganizational learning in terms of both knowledge transfer" and "knowledge creation". By knowledge transfer we mean the transfer of already existing knowledge from one individual or organization to another, whereas knowledge

creation refers to the joint creation of new knowledge (c.f. Inkpen & Dinur, 1998). This distinction, however, is merely an analytical one, as knowledge seldom remains unchanged when travelling from one place to another (Lillrank, 1995; Sahlin-Andersson, 1996). Most knowledge transfer thus also involves some extent of knowledge creation.

Some knowledge characteristics

A first characteristic of knowledge in an organizational context is its level of sharedness (Hedlund, 1994; Nonaka & Takeuchi, 1995). Knowledge in organizations can be common to the organization (via its members) to varying degrees. It can be stored only in an individual's head or spread widely through the organization and manifested in organizational rules and routines. Hedlund (1994) distinguishes between four levels of knowledge carriers – the individual, the group, the organization and the interorganizational domain. Thus, an important aspect of organizational knowledge creation is the amplification and diffusion of individual knowledge to more collective levels (Hedlund, 1994; Inkpen & Dinur, 1998).

A second characterization of organizational knowledge distinguishes between tacit and explicit knowledge (Polanyi, 1967). Explicit knowledge is easily verbalized and thereby easily transferable from one person to another. Examples of explicit knowledge are different kinds of checklists, manuals, and operating procedures that describe appropriate actions in different situations.

In the definition of tacit knowledge, we follow Polanyi (1962) who describes such knowledge as non-verbalized, often even non-verbalizable, and intuitive. The non-verbalizable character of this knowledge makes it difficult to transfer to others without engaging in extended face-to-face contact generating shared experience (Nonaka, 1994; Nonaka et al., 1995).

A third characteristic of knowledge important in this context is the level of embeddedness of a knowledge element (Hansen, Nohria, & Tierney, 1999). Knowledge that is independent of other knowledge elements is transferred more easily than knowledge that is highly embedded into an organizational system. Transferring an isolated software module from one place to another, for example, is thus less problematic than transferring an organizational procedure for knowledge management, a system that relies on company culture, software package support, and strong links to the organization's reward system. As Lillrank (1995) observed,

organizational practices of this nature often are highly embedded, making them difficult to transfer from one context to another (see also Teece, 1998).

Knowledge in a consulting context can also be classified according to its content. In the ICMCI's effort to create a uniform body of knowledge for management consulting, a division is made between knowledge concerning the practice of consulting and knowledge concerning the practice of management (Kyrö, 1995). Knowledge concerning the practice of consulting covers the different activities in the consulting and change process. Examples of this kind of knowledge are diagnostic skills, project management skills and communication skills. Knowledge concerning the practice of management involves issues such as organizing, the use of IT, performance measurement, and so forth. In our analysis, we will refer to knowledge linked to the practice of consulting as process knowledge and knowledge about the practice of management as content knowledge, as this relates to the content of the consulting assignment.

Characteristics of the learning situation

The ease of learning and knowledge creation across organizational boundaries is to a large extent dependent on the character of the knowledge to be acquired. If the knowledge is explicit and has a low level of embeddedness, it is relatively easily acquired and diffused. If the knowledge is of a tacit character and highly embedded, however, its acquisition becomes more problematic. Diffusing this kind of knowledge requires significant interaction between the knowledge carrier and the knowledge receiver (Lillrank, 1995). The implementation of an ERP system involves considerable amounts of both embedded and tacit knowledge (Lindvall et al., 2003).

Wathne, Roos and von Krogh (1996) and Aadne, von Krogh and Roos (1996) identify five factors important for enabling learning in interorganizational settings: openness and trust, interaction channels, prior experience, internalization and motive. These factors are useful for analyzing management consulting projects from a learning perspective.

Openness and Trust concern the willingness of the individuals involved in the consulting process to (1) share their knowledge with each other and (2) interact freely. Such interaction is central for the transfer of the more tacit knowledge that is embedded in social relations and work patterns, as well as the creation of new knowledge. In consulting engagements,

openness is important both for clients to share information about their organization as well as making consultants contribute their expertise. Trust is also an important prerequisite for open interaction in the consultant-client relationship (Bergholz, 1999; Edvardsson, 1990; Lageson, 1999).

Interaction channels describe the context in which interaction takes place. The richer the communication channels (preferably face-to-face), the larger the possibilities for learning (c.f. Nonaka et al., 1995). The consulting process should create many, broad arenas for intense interaction between consultants and different actors in the client organization.

In order to be able to acquire and exploit new knowledge, it has to be integrated with the existing knowledge stock of an organization. Thus, *prior experience* in working with a specific partner increases the chances for knowledge generated in interaction to fit the existing stock of knowledge (Aadne et al., 1996).

Internalization concerns an organization's ability to exploit knowledge in a cooperative relationship. This process involves both the organization's ability to identify relevant knowledge and to diffuse it to relevant parts of the organization. These abilities are linked to the involved individuals' earlier experiences and the existence of arenas for knowledge exchange (Aadne et al., 1996; Stjernberg, 1993).

Finally, *motive* concerns the background of the cooperative relationship. For learning to take place, it has to be an integrated and explicit goal of the cooperation between the consultant and the client organization. If such a motive is lacking, learning is unlikely to happen (Aadne et al., 1996).

The ERP implementation project

This study of an ERP implementation was carried out in a large organization in Sweden, which in the following will be called Alpha. The process was studied through observations of key meetings both on a project- and a sub-project level during a 6-week period about half way through the 4 year implementation. The observations were complemented by interviews with informants on different levels in the project organization and the ongoing business in order to broaden the understanding of the observations and reconstruct the process as it had emerged. Based on this data, a case description was authored which was checked for accuracy with key

informants in the organization. This case description provided the basis for the below descriptions and the patterns identified in these.

Background and organization

The studied project was described as one of the largest ERP implementations in Sweden at the time of the study. It comprised a majority of the functional modules available in the ERP system and thus was to have a significant impact on large parts of the organization. The main aim of the project was to increase administrative efficiency in order to make financial savings.

Implementation was organized in a separate project responsible for design and implementation of the system and associated structures and procedures. The implementations project ranged over a 4 year period and at times involved over 200 persons. The proportion of external consultants in the project varied, but averaged at about 40-50%). The project had its own management structure, and was subdivided into a number of subprojects dealing with different processes in the organization. Examples of sub-projects include “managing HR” and “managing customer relations”.

The overall project organization as well as the different sub-projects were manned by a mixture of implementation consultants, IT consultants and representatives of Alpha. All management positions in the project structure were doubled, including a project manager from Alpha and an assistant project manager from the implementation consultancy. The entire project was located in a shared office space separated from the main locations of Alpha, which were geographically dispersed.

Issues of knowledge transfer from consultants to Alpha were explicitly and continuously addressed in order to secure Alphas learning concerning the ERP system and its maintenance. The main vehicle was viewed to be collaboration between consultants and individuals from Alpha. In order to ensure this interaction, a clear goal was set concerning the ratio between “internal” (Alpha) and external (consultants) resources in the project. This goal was continuously followed up.

This design created two important interfaces or arenas for learning. The first concerns the project in which the analysis of the organization and the interaction between individuals with different organizational and skill backgrounds provides learning opportunities. The second concerns the “regular” organization – in the following called the “business” following the

terminology within the project – in which the system designed in the project is to be operative. For participants in this, the ERP implementation involves learning new routines, but also an opportunity to reflect upon and redesign current operations more fundamentally.

Collaboration and learning within the change program

The project organization brought together people from a number of different organizations including the client organization Alpha, an implementation consultancy, and an IT consultancy. In addition IT specialists from additional organizations could be hired as needs arose. Participants from the different organizations all had partly different roles in the project.

The implementation consultants were the backbone and motor of the project organization. Although their role was limited to that of supplementary project managers on different levels, the implementation consultants kept the project together. They were highly appreciated by the project members from Alpha for their ability to keep things moving and not to loose sight of the target as well as for their ability to spread information throughout the project. Both the project organization, the methodology that structured the project, and the computer based administrative project support were provided by the consultancy. The consultants ensured the progress in the project and chaired most of the meetings on different levels. Implementations consultants were also strongly involved in the day to day work in the project, including data collection from Alpha and to some extent configuration of the ERP system. The consultants' strong drive and focus on deliveries, however, was by some members of Alpha also seen as a problem as they felt that the consultants took over the project. In addition to keeping together and moving the project forward, the implementation consultants contributed with their expertise concerning the design of the processes and system. A direct contact between Alpha and another company in the same industry that had recently implemented an ERP system was established in order to exchange experiences. Learnings from other organizations having implemented the system were also often shared by the consultants.

While the implementation consultants were the backbone and motor of the project, the *Representatives from Alpha* played a central role as the link between the project and the business. Through their simultaneous understanding of the project processes and culture and the business processes and culture, they were important in building a bridge between the two. This was for example manifested in that the project was always represented towards the business by the project managers (which were from alpha) rather than the assistant project

managers form the implementation consultancy. The Alpha project managers were also eager to involve others from alpha in the project. Furthermore, employees from alpha participated in the project as experts on the “business”. They were an important source of information to the consultants in their work with configuring the system and designing the new business processes. Many of the participants from Alpha in the project, however, kept a very low profile and had a role as extra pair of hands in the work that needed to be done rather than getting involved in knowledge creation concerning innovative solutions.

The third category of actors in the project, the *IT consultants,* played a central role in the configuration and process design activities. With their knowledge of the technical system and their business experience from the specific function with which they were working (these consultants generally had both) they played a central role in communicating the consequences of the new system to Alpha employees as well as acting as a sounding board in discussions concerning how to design the business processes in order to make them fit with the system, as well as the specific requirements of Alpha.

Despite this mix of people with different backgrounds, the collaboration within the project was very smooth and beyond the above division of roles, it was hard to spot the organizational belonging of the different actors. The project had a distinct identity, which tied people together and contributed to a bridging of the diverse backgrounds. Central aspects of this identity comprised a clear goal and focus on deliverables, a view of the recipient organization as the customer, the program as focused on IT and a clear, competence-based division of work within the program. These aspects will be described in some more detail in the following.

A uniting goal

The project organization had a strong identity and individuals within it soon referred to the project as ”we”. The use of “we” to signal belonging to the employing organization (e.g. the implementation consultancy or Alpha) was extremely rare, especially on the sub-project level. The rapid socialization of project members into the project identity was strongly supported by the fact that all project members sat together in an open office space and that they were engaged full-time in the project. The specific, rather technical terminology, as well as detailed administrative routines, that new members were forced into in their daily work, further contributed to the formation of a unique identity for the project.

Most importantly, however, project members were united by the time plan and the deliverables of the project. Clear deliverables with clear deadlines that were continuously followed up created a common goal to pursue. In this context, people from the client organization and the different consultants viewed each other as important resources. They were all evaluated against their ability to deliver on time and budget and needed each other to succeed.

> We are a team. You don't think of that they are consultants. We say frankly what we think. We have come beyond the stage where we were wondering what their actual motives were – do they want the well of Alpha, or just deliver a project? There is nothing of this in the team. (Project manager, Alpha)

However, while tying together participants in the project organization, this focus on deliverables simultaneously also created a distance to the business, as this, with its position outside the control of the project, was identified as the major threat to the project's ability to deliver. Delays and quality issues in the input from the business to the project were viewed as a central threat to the project members' ability to deliver on time. Furthermore, the production organization's inability to free people from day to day work for tasks providing important input to the project, led to an increasing use of consultants, as these were then used instead of internal resources, however, further distancing the project from the business, which the work of the project was meant to support.

The business – "those out there"

Ingrained in the identity of the project was a clear demarcation in relation to the business. On all organization charts of the project, the project and "the business" are clearly separated and their respective responsibilities defined. Also economically, project members were eager to separate costs taken by the project and costs taken by the business.

In the project identity, the business was defined as those formulating the requirements for the project's work as well as being the recipients of the work. Statements such as "we have to check with the business what is needed", "we need input from the business", "is this a requirement from the business?" were recurring in the project when the actual design of deliverables was discussed. In addition to goals related to delivering on time and budget, it was also viewed as important that the recipients of the deliverables from the project – the members of the business – were happy with the solution. The project organization thus perceived itself as just executing the requirements of the business.

While this relation between the business and project may sound integrating, tying the two closely together, the view of the business as defining the requirements for the project actually worked as a force distancing the project and the organization from each other. In its focus on keeping the project plan, the project representatives continuously pressured the business to make radical, and sometimes irreversible decisions concerning the way in which business was to be carried out in the future. As will be described in the next section, the time pressure from the project led to pressures on the business to make fast decisions. Decisions with far reaching consequences were demanded from the business within very short timeframes. However, not being involved directly in the project and having a day-to-day business to deal with, this decision-making was often perceived as stressful, frustrating and potentially led to suboptimal decisions.

A technical project

A third aspect of the identity of the project was that it to a large extent was constructed as a technical/IT project rather than a business development project. This was rather natural given the task of implementing and configuring the ERP system, but it was also clearly manifested in relation to the production organization for which the system was meant as a support. In workshops with the aim of soliciting the input and ideas from representatives of the business, a rather technical jargon was used. This often resulted in a low participation from the representatives from the business. The technical focus was also manifest on the level of the top-project management. In an observed project meeting, the issue of some employees' inability to adapt to the new work process was brought up. The chairman of the steering committee summarized the program as consisting of two separate problems - a technical one and a competence problem. While the technical problem was regarded as one to be dealt with within the project, the competence problem was defined as lying outside the responsibility of the project – "something for the HR department to deal with".

Learning in the project

The learning for members from Alpha within the project organization was significant within a number of different areas. Crudely, three knowledge areas can be identified in which learning took place – the business, the IT system and project management. Learning thus covered both what was above called process and content knowledge.

Learning about the IT system was the most thoroughly and explicitly planned for learning. In order to ensure Alphas competence to maintain the new ERP system, knowledge transfer was actively worked with and followed up. Before the termination of each subproject, a knowledge transfer contract was to be signed ensuring that necessary knowledge to maintain the solution had been transferred to some specific individual in Alpha. Knowledge transfer was managed through interaction. Through active participation in the development work, Alpha employees were assumed to learn the necessary knowledge and skills representing both tacit and explicit knowledge. This individual knowledge of the project members was made organizational by the establishment of a designated unit – a competence centre within the IT department – where the ERP-system competence of the organization was concentrated for future use. The competence of this competence centre was thus built during the implementation process through participation and interaction with the consultants.

Members in the project also gained increased knowledge of the organization and its current operations. By acting as the links between the project and the organization, the project members from Alpha gained a deep understanding of their own business. Through the input from consultants this understanding was also put in perspective in relation to what other organizations do, enabling a reframing of current routines. The consultants experience from other organizations was an important input to learning for the Alpha project members as were the relations to other organizations having implemented the system that had emerged on the initiative of the consultants. While this knowledge was an important input to the design of the new work structures and processes, it seldom triggered any innovative and future oriented reflections within the organization, something we will come back to.

Finally, participants from Alpha in the project learned new ways of working in projects, new methods and structures in the day to day collaboration with the consultants:

> I think its great to work with the consultants. You pick up a lot of good stuff. They have some methodologies they are good at, which you can appropriate (Project manager)

While this knowledge was initially only individual there were some indications that it might be acknowledged more broadly. The project was regarded best practice in how to manage projects in Alpha, and management had asked project management the question whether this way of working could be applied to other projects in Alpha as well. Furthermore, a number of the project managers from Alpha in the project came from Alphas internal project

management organization. They would thus also after the project work with tasks were their newly acquired competencies would be acknowledged and come to use.

Collaboration and learning within the recipient organization

For the business, the implementation of an ERP system represented a large learning and knowledge creation opportunity, as it involved the complete redesign of business processes. Although these processes were to some extent predefined by the ERP system, there still existed considerable freedom to be exploited by primarily managers in the business, creating a need for learning and knowledge creation processes. However, while "the business" was given a rather prominent position as providers of specifications by the project, the people in the business seldom perceived their role as very influential. Instead they felt rather stressed and frustrated victims of a radical savings program. Rather than exploration and learning, their focus was on survival.

A stressed customer

While the project highlighted the importance of the business as the provider of specifications for the system, members of the business rather saw themselves as the recipients of a standardized solution:

> The project provides the structure and tells us what to do and what support will be delivered. Then we are of course supposed to implement this. This can only be done in the business (Manager, Alpha)

Managers in the business felt that they were forced to make many decisions concerning the future of their business without really understanding the consequences of these decisions or having the time to investigate them in detail. A lack of resources in the business – personnel reductions were taking place in parallel with the project – made it very difficult to devote sufficient time to really understanding and investigating the challenges posed by the project.

> Project manager: We consume all XX [representative from the business] time, because these issues are so complex. They are under a lot of pressure in the business. They have to understand that they must devote time to this, otherwise they won't keep up.

Rather than being an opportunity to more efficient, less routinized work procedures, the project, thus, was perceived as something coming from the top, giving them more problems

than relief. The technical character of the project further reduced the perceived willingness to actively get engaged in the questions related to the project.

A frustrated recipient

The effects of the project were naturally to be achieved within the business. The business managers were thus to be held responsible for realizing the planned savings from the project. Realizing these, however, in many cases showed more difficult than expected. Productivity gains were often not realized as fast as projected and in many cases productivity decreased initially due to difficulties for the employees to adjust to the new systems and processes. Some of the gains were also perceived more as desktop products difficult to realize in practice – such as 10 minute daily savings on administrative work for managers. While the project had accumulated these to a potential personnel reduction, the division managers found it difficult to realize this in practice. They couldn't just fire 10% of their managers. Members of the business also felt frustration over the perceived positive image of the project provided by the project organization, while they themselves had difficulties realizing the claimed potential.

> There is a discrepancy between the members of the project, that perceive the system to be a success and those who actually use it. I have talked to people in CC [a unit with implementation problems] and they were disturbed that no one said that things didn't go that well. (Manager from the business)

A savings program

The enthusiasm from the business to participate and get engaged in the program was also hampered by its explicit focus on savings related to redundancies. Although "inumerous qualitative gains" were claimed by the project, these were not specified in any further detail, and cost savings were clearly communicated as the number one priority. Managers in Alpha consistently described the project as a way of making administration 25% more efficient. Although employees accepted the need for these measures, as the financial situation of the company was precarious, this goal had difficulties creating enthusiasm, which may have been one explanation to the observed distance between the business and the project.

Learning in the recipient organization

For "the business" the ERP implementation project meant a reassessment of most organizational processes and routines. The ERP system, with its built-in "best practice"

processes required the organization to reflect upon the own organization in relation to the IT system in order to create an alignment between the two. Although standard processes are to some extent prescribed, there is still some freedom in the configuration of the system requiring important design choices to be made. In these choices, there is a potential for learning and knowledge creation concerning the way in which business is carried out. It is mainly this learning, which takes place on a managerial level, that will be in focus for this discussion. However substantial learning is also involved in the actual implementation of the system, as employees have to learn new routines and processes. This mainly involved formal training processes.

While learning of new skills and practices and the reflection on the business were seen as something positive and interesting in the project organization, the need to reflect on the current business and design future processes was seen as less of an opportunity in the business. The organization generally felt a lack of time and skills to make the kinds of decisions demanded by the project. The tight time frame and delivery focus of the project also made the business's thorough investigation into different issues a threat rather than an opportunity for the project organization, as this took time and could easily cause delays. Rather than encouraging thorough investigations within the business, the project often "helped out" by preparing a recommendation, taking into account Alpha's processes as well as experiences from other organizations. These recommendations were however often perceived as a way for the project and consultants "to take over" and considerably reduced engagement and ownership for the solutions.

Interaction with the project and investigation activities that had a potential for substantial learning concerning the business were generally carried out on the initiative of the project and perceived as a burden by the business. Although such investigations generally led to the simplification of routines and processes, the initiative from the business in its interactions with the project was limited. Members from the business involved in workshops concerning the design of new processes and routines generally acted as information providers rather than active co-creators of solutions.

This indicates, that learning opportunities in relation to the design of new procedures and processes were left unexploited in the business. A lack of time and resources as well as an at times somewhat tense relation between the project and the business impeded knowledge flows and joint knowledge creation, and thus created missed opportunities when it comes to

designing unique and creative new ways of working. This may have led to processes and procedures less well suited for Alpha than they could have been

However, numerous new processes and procedures were implemented in Alpha thus pointing at a substantial learning on an organizational level. For many employees this meant radically new ways of working, ways that were often met with frustration as they were perceived as less smooth and flexible than the old ways. This created some resistance to the new knowledge and thus implementation problems.

Discussion

The investigation into issues of learning in an ERP project undertaken in this paper reveals two central arenas for learning and knowledge creation – the implementation project and "the business" – the organization in which the system will become operational. While the project organization seemed to realize rich learning in different areas and on different levels based on the interaction between members in the project from several different organizations, the learning in the business seems more problematic. Consequently, the challenge in this "interorganizational learning situation" where knowledge is brought into an organization and opportunities for knowledge creation are opened, seems to reside in the interface between the development project and the ordinary organization rather than between representatives of the client organization and the consultants as has often been indicated by the consulting literature. In the following these differences in the ease of joint learning and knowledge creation will be discussed against the background of the prerequisites for interorganizational learning identified by Aadne et al. (1996) and Wathne et al. (1996): openness and trust, interaction channels, prior experience, internalization and motive.

Openness and trust in the project was, as mentioned above, nearly total. The organizational backgrounds of different participants in the project were invisible in the day to day work. All, regardless of their organizational background, identified with the project and had their primary focus on the realization of its goals. In the pursuit of this goal, information exchange was open and free, supported by a common language and common procedures. Project members, being dependent on one another for their success had strong trust in each other and there were few speculations of any hidden agendas. Similar open cultures enabling joint learning in ERP implementation projects are identified by Lindvall and Pahlberg (2003) who observed that the interests of the project often took precedence over individual organizational

interests in ERP implementation projects, creating an open (sometimes even too open) information flow between organizations involved in the implementation project.

In the relation between the project and the business, the situation however was a different one characterized by limited openness and trust. The project to some extent saw the business as a threat to its timely completion of the task and the business saw the project, with its demands for quick answers and resources as a treat to the day to day business. Against this background communication was not always open, but guided by political agendas of protecting own interests. Trust in the other party was also limited with the business being sceptical towards the project's understanding of what the business was really like, and the project having limited trust in the business's understanding of the importance of the decisions to be made. Conflicting interests between project and organization, partly driven by the strong time pressure on the project, thus were an important impediment to the creation of an open and trustful relationship and knowledge transfer and creation.

Interaction channels were numerous and rich in the project, where individuals from many different organizations worked together on a daily basis solving common problems. This rich interaction, which was partly enabled by all project members sharing a common office space, was described as a central vehicle for the learning between project participants, including learning about the business, the IT system and project management.

In the interface between the project and the line organization, the interaction channels were fewer and more formal. The bulk of interfaces between the project and the business had an information sharing rather than a joint problem solving focus, thus limiting opportunities for learning and knowledge creation. A bulk of the interaction between the project and the business was focused on "getting the 'ok' from the business."

Prior experience concerns the knowledge background of the involved parties as a prerequisite for joint learning. This needs to be to some extent overlapping in order for the organizations to understand each other and thus learn from each other and create joint knowledge. In the project, such a shared background was missing. However, through initial training activities in the ERP system and the project management methodology, a common ground was successively established into which new members were rapidly socialized.

This establishment of a distinct shared language, procedures and understanding within the project, however, simultaneously distanced the project from the business. Representatives from Alpha in the project soon adopted the technical jargon. Although they still were important as communication links to the business, the project was perceived as rather distant from the business and thus difficult to understand and get involved in.

Internalization concerns the focal organization's ability to identify relevant knowledge and diffuse it to relevant places within the organization. This worked rather well within the project, where especially knowledge concerning the ERP system was clearly identified as something to learn and make available to the business by collecting it within a dedicated organizational unit. Similar, although not as consciously planned, processes could be observed in regard of project management knowledge, which was accumulated by project participants with an organizational background in the project management organization. Knowledge diffusion within the project was also very efficient, facilitated by the implementation consultants that were described as the backbone of the project. Their way of communicating and disseminating knowledge throughout the project was described as exemplary project members.

In the project-business interface, internalization was somewhat more challenging. Employees in the business not directly involved in the implementation project did not see the interaction with the project as a learning opportunity, which impeded the identification of relevant knowledge. Also the internal transfer of knowledge was less efficient as there were no explicit mechanisms for that.

Motive finally concerns the explicit identification of learning and knowledge creation as a purpose of the cooperation. Within the project there was an explicitly stated motive to transfer IT knowledge to the organization, which was realized by ensuring the participation of Alpha employees in the technical design activities. Such explicit motives did not exist concerning the business knowledge or the project management knowledge that was identified as important learnings by Alpha participants in the project. Still, the close interaction in the project brought this learning about any way.

In the business, there was also an explicit learning motive. This was however concerned with the organization's learning of the new processes and procedures designed by the project. Learning in the development process was not an explicit aim, which may be an important

explanation for why potential learning opportunities remained unexploited. This is in line with Lindvall and Pahlberg's (2003) observation, that the potential learning in process mapping when implementing ERP systems is seldom realized. Instead "the system is framed as a concrete technical solution to a concrete technical problem" (p. 21), which in turn creates limited motives for learning.

The above discussions indicates that ERP implementation, to a large extent by being a meeting ground for people with different knowledge/skills and backgrounds, creates considerable opportunities for individual and, if managed well, organizational learning. A large part of this takes place through interaction between employees of the implementing organization and different consultants and focuses on the interchange of tacit knowledge – socialization in terms of Nonaka and Tekeuchi (1995). This indicates, that the knowledge perceived as central by organizational members to acquire is regarded to be tacit – at least to some extent. This is in line with Lindvall and Pahlberg's (2003) observation that the design of the ERP system and formal methods and tools provide a range of possibilities, but that the difference between more or less successful implementations really lies in the way in which individuals – consultants and customers in interaction – adapt the system to the specific prerequisites in a specific organization.

This focus on tacit knowledge, and thus individual learning however creates a challenge of extending the knowledge from the individual to the organization. Two ways to achieve this were identified in this study. A first way mainly applied in relation to the IT knowledge, and to some extent to project management knowledge, was one of making the individual knowledge visible and thus easily accessible to the rest of the organization. In both these cases, this was supported by the creation of organizational units with an explicit focus on developing and maintaining that specific kind of knowledge.

In some instances, there were also signs of an extension of learning from the individual to the organizational level through the institutionalization of new routines and procedures. This was exemplified by the discussion about making the project management methodology applied in the project an organizational standard. Similarly, the new organizational processes and procedures designed by the project to fit the ERP system are another example in which new knowledge about how to run the business was extended from the individuals in the project that designed the processes to the entire organization.

These processes of extending the individual learning to a more organizational learning are highly dependent on the organization's awareness of learning opportunities and its determination to exploit them. As indicated by Werr and Linnarsson (2002), learning in consulting projects most often takes place in the individual interaction between consultant and buyer. It is, however, the awareness of this knowledge creation, and its subsequent use in the organization that lacks systematic acknowledgement and management.

Conclusions

The implementation of an ERP system provides ample opportunities for individual as well as organizational learning in a number of different knowledge areas, including the way in which operations are carried out (structures and processes), the technical configuration and maintenance of the ERP system and the way in which projects are organized and structured. The main vehicle for this learning was the interaction between people with different skills and organizational backgrounds.

The ERP implementation project was found to provide a powerful arena for such interaction. Mechanisms inherent in the project form, such as a claimed clear goal and a limited time frame created an environment that efficiently erased barriers caused by different organizational backgrounds within the project. A strong project identity overrode potential conflicts between organizational interests and created an environment in which knowledge flow was open and knowledge creation intense.

At the same time, these learning-enhancing characteristics of the ERP implementation project created a learning-limiting barrier to the ordinary business. Project and business perceived each other as threats rather than supports, creating distrust and conflict in the relationship. This impeded the potential knowledge creation in the business, especially around the design of business processes and structures.

This highlights the interface between consultant supported change projects and the recipient organization as a problematic area when it comes to learning and knowledge transfer in a consulting context rather than the relation between the consultant and the buyer of consultant services, that has been the focus in the literature. The management of this interface is however challenging, as it involves a trade-off between efficiency in the project and support of knowledge transfer and creation in the business. The very characteristics that support an

efficient project, e.g. the existence of a strong identity and culture, a focus on deliveries and deadlines, etc. may at the same time create the kind of tensions impeding learning in the business that were observed in this case.

This calls for a conscious design and management of the interface between business and implementation project balancing the need and opportunities for learning and the need for rapid and efficient implementation. While the involvement of representatives from the business in the project was of great importance in creating bridges to the business, this was however only partly effective as a way of integrating the project and the business. Project participants from the business soon identified more with the project than with their home organization. They adopted the rather technical jargon as well as the delivery focus of the project and were by their former colleagues regarded more as representatives of the project than the businesses' representatives in the project. The alignment of goals between business and project, together with the time and resources made available for managers in the business to engage in the design of the system and the new business processes thus emerge as central enablers of learning in the business in connection with consultant supported ERP implementation.

References

Aadne, J. H., von Krogh, G., & Roos, J. 1996. Representationism: The traditional Approach to Cooperative Strategies. In G. von Krogh, & J. Roos (Eds.), ***Managing Knowledge - Perspectives on cooperation and competition***: 9-31. London: Sage.

Bergholz, H. 1999. Do More than Fix my Company. ***Journal of Management Consulting***, 10(4): 29-33.

Bidault, F., & Cummings, T. G. 1994. Innovation through alliances: expectations and limitations. ***R&D Management***, 24(1): 33-45.

Edvardsson, B. 1990. Management Consulting: Towards a Successful Relationship. ***International Journal of Service Industry Management***, 1(3): 4-19.

Ellström, P.-E. 2000. Lärande och kompetensutveckling i "magra organisationer": Problem och möjligheter. In L. Lennerlöf (Ed.), ***Avveckla eller utveckla?*** Stockholm: Rådet för arbetslivsforskning.

Greiner, L. E., & Metzger, R. O. 1983. ***Consulting to Management***. Englewood Cliffs, N.J.: Prentice Hall.

Hansen, M. T., Nohria, N., & Tierney, T. 1999. What's your strategy for managing knowledge? ***Harward Business Review***(March-April): 106-116.

Hargadon, A. B. 1998. Firms as Knowledge Brokers: Lessons in Pursuing Continuous Innovation. ***California Management Review***, 40(3): 209-227.

Hedlund, G. 1994. A Model of Knowledge Management and the N-Form Corporation. ***Strategic Management Journal***, 15: 73-90.

Inkpen, A. C., & Dinur, A. 1998. Knowledge Management Processes and International Joint Ventures. ***Organization Science***, 19(4): 454-467.

Kyrö, P. 1995. ***The Management Consulting Industry Described by using the Concept of "Profession"***. Unpublished Ph.D. Thesis, University of Helsinki, Faculty of Education.

Lageson, P. 1999. ***The Purchasing of Technical Consultancy Services***. Unpublished Licentiate thesis, Luleå University of Technology, Luleå.

Lennerlöf, L. (Ed.). 2000. ***Avveckla eller utveckla?*** Stockholm: Rådet för arbetslivsforskning.

Lillrank, P. 1995. The Transfer of Management Innovations from Japan. ***Organization Studies***, 16(6): 971-989.

Lindvall, J., & Pahlberg, C. 2003. Learning in Interaction: Consultants as intermediaries between software providers and users: the case of SAP/R3.

Nonaka, I. 1994. A Dynamic Theory of Organizational Knowledge Creation. ***Organization Science***, 5(1): 14-37.

Nonaka, I., & Takeuchi, H. 1995. ***The Knowledge Creating Company***. New York: Oxford University Press.

Polanyi, M. 1962. ***Personal Knowledge: Towards a Post-Critical Philosophy***. New York: Harper Torchbooks.

Polanyi, M. 1967. ***The Tacit Dimension***. London: Routledge & Kegan Paul Ltd.

Poulfelt, F., & Payne, A. 1994. Management Consultants: Client and Consultant Perspectives. ***Scandinavian Journal of Management***, 10(4): 421 - 436.

Risling, A. 1987. ***Konsult i organisation***. Borås: Natur och Kultur.

Sahlin-Andersson, K. 1996. Imitating by Editing Success: The Construction of Organizational Fields. In B. Czarniawska, & G. Sevón (Eds.), ***Translating Organizational Change***: 69-92. Berlin: Walter de Gruyter.

Schein, E. H. 1988. ***Process Consultation - Its Role in Organization Development***. Reading: Addision Wesley.

Schein, E. H. 1993. Models of Consultation - What do organizations of the 90's need? In R. T. Golembiewski (Ed.), ***Handbook of Organizational Consultation***: 653-662. New York: Marcel Dekker.

Stjernberg, T. 1993. ***Organisationsideal - Livskraft och spridning, ett tjugoårigt perspektiv***. Stockholm: Norstedts Juridik.

Stjernberg, T., & Werr, A. 2001. Consulting Thought-fully. In J. Löwstedt, & B. Hellgren (Eds.), ***Managing the Thoughtful Enterprise***: 259-280. Bergen: Fagbokforlaget.

Teece, D. J. 1998. Capturing Value from Knowledge Assets: The new economy, markets for know-how, and intangible assets. ***California Management Review***, 40(3): 55-79.

Wathne, K., Roos, J., & von Krogh, G. 1996. Towards a Theory of Knowledge Transfer in a Cooperative Context. In G. von Krogh, & J. Roos (Eds.), ***Managing Knowledge - Perspectives on cooperation and competition***: 55-81. London: Sage.

Werr, A., & Linnarsson, H. 2002. Management Consulting for Client Learning? Clients' perceptions on learning in management consulting. In A. Buono (Ed.), ***Knowledge and Value Development in Management Consulting***: 3-31. Greenwich: Information Age Publishing.

Vogt, J. F. 1993. Consulting and Empowerment - Building capacity through participatory research, experiential learning, and awareness. In R. J. Golembiewski (Ed.), ***Handbook of Organizational Consultation***: 743-751. New York: Marcel Dekker.